

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1 - 14. (canceled)

15. (previously presented) A process for producing a semiconductor device which comprises forming an element-separating oxide film on a silicon substrate by thermal oxidation, and thereafter carrying out a heat-treatment at a temperature of not lower than 800 °C while keeping a surface of the oxide film in an inert atmosphere, followed by formation of a gate oxide film, introduction of impurities, formation of electrodes and wiring, and formation of an insulating film so as to form a transistor,

wherein the heat-treatment of the oxide film is carried out after removal of an oxidation-preventing film so as to make the oxide film in an element-forming area in a bare state, and the thermal oxidation is carried out at least in an atmosphere of a gaseous mixture of hydrogen and oxygen or in an atmosphere of H₂O.

16. (previously presented) A process according to claim 15, wherein the heat-treatment is carried out in an atmosphere of an inert gas selected from nitrogen, hydrogen and argon, or a gaseous mixture of these gases, said gas or gaseous mixture being able to contain 5% or less of oxygen.

17. (previously presented) A process according to claim 15, wherein the oxide film is kept in a bare state during the heat-treatment for stress relaxation.

18. (previously presented) A process for producing a semiconductor device, which comprises the steps of:

oxidizing a main surface of a silicon substrate,

forming an oxidation-preventing film on portions of the oxidized silicon substrate,

removing a part of the oxidation-preventing film that is located in an element-separating area,

forming an element-separating oxide film on the silicon substrate in the element-separating area after removing the part of the oxidation-preventing film,

forming a thermal oxide film on the silicon substrate by oxidizing the silicon substrate, and

after forming the thermal oxide film in an element-forming area, carrying out a heat-treatment at a temperature of 800° C or higher in an inert atmosphere, and

which further comprises forming a gate oxide film over the heat-treated silicon substrate.

19. (previously presented) A process according to claim 18, wherein the heat-treatment is carried out in an atmosphere of an inert gas selected from nitrogen, hydrogen and argon, or a gaseous mixture of these gases, said gas or gaseous mixture being able to contain 5% or less of oxygen.

20. (previously presented) A process according to claim 18, wherein the oxide film is kept in a bare state during the heat-treatment for stress relaxation.

21. (previously presented) A process according to claim 18, wherein the formation of the thermal oxide film is carried out at least in an atmosphere of a gaseous mixture of hydrogen and oxygen or in an atmosphere of H_2O .

22. (previously presented) A process according to claim 18, wherein the heat-treatment is carried out for relaxation of stress in the thermal oxide film.

23. (previously presented) A process for producing a semiconductor device, which comprises the steps of:

oxidizing a main surface of a silicon substrate,

forming an oxidation-preventing film on portions of the oxidized silicon substrate,

removing a part of the oxidation-preventing film that is located in an element-separating area,

forming an element-separating oxide film on the silicon substrate in the element-separating area after removing the part of the oxidation-preventing film,

forming a thermal oxide film on the silicon substrate by oxidizing the silicon substrate,

forming a gate electrode film on the thermal oxide film, and

after forming the gate electrode film, carrying out a heat-treatment at a temperature of $800^{\circ}C$ or higher in an inert atmosphere.

24. (previously presented) A process according to claim 23, wherein the heat-treatment is carried out in an atmosphere of an inert gas selected from nitrogen,

hydrogen and argon, or a gaseous mixture of these gases, said gas or gaseous mixture being able to contain 5% or less of oxygen.

25. (previously presented) A process according to claim 23, wherein the oxide film is kept in a bare state during the heat treatment for stress relaxation,

26. (previously presented) A process according to claim 23, wherein the formation of the thermal oxide film is carried out at least in an atmosphere of a gaseous mixture of hydrogen and oxygen or in an atmosphere of H₂O.

27. (previously presented) A process according to claim 23, wherein the heat-treatment is carried out for relaxation of stress in the gate electrode film.

28. (previously presented) A process for producing a semiconductor device, which comprises the steps of:

forming an oxidation-preventing film on an oxidized surface of a semiconductor substrate,

removing a part of the oxidation-preventing film that is located in an element-separating area adjacent to an element-forming area,

forming an element-separating oxide film in the element-separating area on the semiconductor substrate after removing the part of the oxidation-preventing film,

carrying out a heat-treatment at a temperature of 800°C or higher while keeping the oxide film in the element-forming area on the surface of the semiconductor substrate in an inert atmosphere,

exposing the surface of the semiconductor substrate in the element—forming area, and

forming a gate oxide film over the heat-treated semiconductor substrate.

29. (currently amended) A process for producing a semiconductor device, which comprises the steps of;

forming a thermal oxide film on a semiconductor substrate,

forming a nitride film on the thermal oxide film,

forming an element-separating area after removing a part of the nitride film,

removing the remaining nitride film formed on the rest of the area after, removal of the part of the nitride film in the previous step, followed by heat-treatment at 800°C or higher,

exposing the semiconductor substrate in the area from which the nitride film is removed,

forming a gate oxide film on the exposed semiconductor substrate,

carrying out a heat-treatment of the gate oxide film formed semiconductor substrate at a temperature of 800°C, and

forming a gate electrode on the gate oxide film.

30. (previously presented) A process for producing a semiconductor device, which comprises the steps of:

forming a nitride film having an opening on a silicon substrate surface,

forming an element-separating area which separates semiconductor elements with electrical insulation,

removing the nitride film,

carrying out a heat-treatment at a temperature of 800°C or higher,
forming an gate oxide film on the silicon substrate separated by the element-separation area, and

carrying out a heat-treatment at a temperature of 950°C or higher in a state wherein the gate oxide film is formed.

31. (previously presented) A process for producing a semiconductor device, which comprises the steps of:

forming a nitride film having an opening on a silicon substrate surface,
forming a partially thick oxide film for separating semiconductor elements with electrical insulation,

removing the nitride film,

carrying out a heat-treatment at a temperature of 800°C or higher,

forming a gate oxide film for MOS transistor, and

immediately after the gate oxidation, carrying out a heat-treatment at a temperature of 800° C or higher of the silicon substrate on which the gate oxide film is formed, or after forming a gate electrode on the gate oxide film, carrying out a heat-treatment at a temperature of 800°C or higher.

32. (previously presented) A process for producing a semiconductor device according to claim 28, wherein the semiconductor device is a memory device or a computing device.

33. (previously presented) A process for producing a semiconductor device according to claim 32, wherein the memory device is a flash memory, a dynamic random access memory or a static random access memory.

34. (previously presented) A semiconductor device produced by the process of claim 28.

35. (currently amended) A process for producing a semiconductor device wherein a gate insulating film is an oxide film, which comprises the steps of:

- forming a thermal oxide film on a semiconductor substrate,
- forming a nitride film on the thermal oxide film,
- forming an element-separating area by removing a part of the nitride film,
- after removal of the nitride film retained in the area not removed in the previous step, carrying out a heat-treatment at a temperature of 800°C or higher,
- exposing the semiconductor substrate surface in the area from which the nitride film is removed,
- forming a gate oxide film on the exposed semiconductor substrate surface,
- forming a gate electrode on the gate oxide film, and
- heat-treating the semiconductor substrate on which the gate electrode is formed, at a temperature of 800°C or higher.

36. (previously presented) A process for producing a semiconductor device, which comprises the steps of:

- forming a tunnel oxide film on a semiconductor substrate,
- forming a floating electrode on the tunnel oxide film,

forming an insulating film on the floating electrode,
forming a controlling electrode on the insulating film, and
subjecting the semiconductor substrate on which the controlling electrode is
formed to heat-treatment at a temperature of 800°C or higher.